

Appl. No.: 10/023,732
Amdt. dated 11/28/2005
Reply to Office action of June 28, 2005

REMARKS

Claims 7-15 and 17-29 are currently pending in the present application and Claims 7-15, 18, 20, 21, and 27-29 have been allowed. In the Office Action dated June 28, 2005, Claims 17, 19, and 22-26 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,742,907 to Funamoto et al. ("Funamoto"). In response to the Office Action, Applicant has amended independent Claim 17. As explained below, Applicant respectfully submits that the claimed invention of amended Claim 17, and by dependency Claims 19, 22, and 23, is patentably distinct from the Funamoto patent. Furthermore, Applicant traverses the rejection of independent Claim 24 and dependent Claims 25 and 26. As such, Applicant respectfully requests reconsideration and allowance of all of the pending claims of the present application.

Funamoto is generally directed to the design of light-guide plates 11 for illuminating a display 6, where the light source 2 shines light into an end of a light-guide plate 11. The light is reflected internally through the light-guide plate 11 and is eventually dispersed along the display 6 for illuminating the display. For purposes of the rejection of independent Claims 17 and 24, the Office Action specifically refers to the display arrangement shown in Figure 80 and the light-guide plate 11 shown in Figure 74 of Funamoto. Figure 74 discloses a light-guide plate 11 having rib-shaped projections 1612. A rod-shaped optical diffuser 1602 is shown at the side of the light-guide plate 11. Point light sources such as LED's are arranged at the end faces of the rod-shaped optical diffuser 1602, although these are not shown in Figure 74. The optical diffuser 1602 provides a uniform light input into the light-guide plate 11. Figure 30A shows how this light is reflected inside a similar light-guide plate 11 before being dispersed onto the display.

Funamoto does not teach or suggest "a display assembly comprising . . . a window having an outer surface disposed adjacent a display without an intervening layer of material therebetween, and positioned to define a gap between the outer surface and the display . . . wherein when light is shone directly into the gap the grating distributes the light in the direction of the display without the light passing through an intervening layer of material," as recited by amended independent Claim 17 (emphasis added). Amongst other distinctions, Funamoto specifically does not teach or suggest that light may be shone directly into a gap between the outer surface of the display window and the display with the grating on the outer surface of the

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window being configured to distribute the light in the direction of the display without the light passing through an intervening layer of material, as recited by amended Claim 17.

In contrast to independent Claim 17 of the present invention, Funamoto is directed towards inputting light at an end face 16 of a light-guide plate 11 and then using total internal reflection to illuminate the full illuminated element 6. *See* Funamoto, col. 8, lines 49-65. Funamoto specifically states that "[a]fter the optical flux from a point light source is input from end face 16 as shown by ray 19a or 19b, it is subjected to total reflection within the light-guide plate 11 and is emitted solely from the side faces 15 of the projections 12, so the optical output from the back face of the illumination device is large, enabling illuminated element 6 to be efficiently illuminated." Funamoto, col. 8, lines 59-65. Thus, not only does Funamoto not teach shining light directly into a gap between a display window and the display and, accordingly, does not include the structure for distributing the light in the direction of the display without the light passing through an intervening layer of material; as recited by independent Claim 17, but there is also no suggestion in Funamoto to use any different method of illuminating a display other than shining light directly into the end face of a light-guide plate. For example, in the light-guide plates 11 of Figures 1A, 3, 4, 5, 9A, 14A, and 23A, light is shone directly into the light-guide plate 11 from its side, and is not shone directly into a gap between the light-guide plate 11 and an illuminated element 6. In Figure 80, the light source 2 is clearly shown adjacent to the end face of the light-guide plate 11, and does not shine into a gap between the light-guide plate 11 and the notice 56.

Furthermore, the light guide plate 11 in Funamoto is particularly designed for light to be shone into and reflected through the light-guide plate 11. Specifically, the shape of the projections 12 of the light-guide plate 11 in Funamoto have been designed so that when the light being reflected within the light-guide plate 11 meets the interface between a projection 12 and the air, the light is directed towards the illuminated element 6. *See, e.g.,* Funamoto, Fig. 81A. For example, column 9, lines 51-65 describe how to design the projections 12, stating "[r]egarding a ratio of the height and width . . . of projections 12, this may be below 1:1 since the angle of elevation of a light ray within the light-guide plate 11 and the planar direction is less than 45°; and in fact satisfactory performance is exhibited up to a ratio of about 1:2, since rays of

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under 20° represent more than 90%." (Emphasis added.) No consideration is given as to how the projections would have to be formed if light were shone into the gap between the light-guide plate 11 and the illuminated element 6 in Funamoto. As such, Funamoto does not teach or suggest shining light directly into the gap between the outer surface of the window and the display so that the grating on the outer surface of the window distributes the light in the direction of the display without the light passing through an intervening layer of material. Accordingly, the rejection of independent Claim 17, as well as the rejection of dependent Claims 19, 22, and 23, has been overcome.

With regard to the rejection of independent Claim 24, and as an additional patentable distinction of independent Claim 17, Funamoto does not teach or suggest using the light-guide plate 11 as a display window. Usual practice in the art is to have a display window that overlies the light-guide plate. This practice is specifically described in the background section of the present specification. *See* the present application, p. 3, lines 18-21. Funamoto discloses the use of such an overlying cover in Figure 7 and in column 11, lines 16-42. Specifically, Funamoto states that "in an electronic device incorporating this illumination device, transparent plate or sheet 8 may also serve as the cover glass of the casing." Funamoto, col. 11, lines 40-42. Funamoto also describes the importance of the transparent sheet 8, specifically when using a light-guide plate, since even slight damage to the surface of the light-guide plate can disrupt the proper reflection of light traveling through the light-guide plate 11. *See* Funamoto, col. 11, lines 21-24. In contrast to Funamoto, the relevant portion of independent Claim 24 recites "[a] unitary display window for placement in registration with a display so that the display is viewable through the window, wherein a first outer surface of the window is for exposure to a user, and a second outer surface of the window is for placement adjacent the display." Likewise, independent Claim 17 also recites using the window itself to distribute the light. Therefore, since Funamoto does not teach or suggest using the light-guide plate 11 as the display window, independent Claims 17 and 24, as well as the claims that depend therefrom, are patentably distinct over Funamoto and, therefore, should be in condition for allowance.


In view of the remarks and amendments presented above, it is respectfully submitted that the claims of the present application are in condition for allowance. It is respectfully requested

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that a Notice of Allowance be issued in due course. The Examiner is requested to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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Sarah B. Simmons

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Date

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